REMARKS

Claims 1–13 are presently pending and stand rejected under 35 U.S.C. § 103(a) as being obvious from the combination of Canfield in view of Quatieri.

Claim 1 recites, among other limitations, "replacing the initial phases of at least one of the frames with the ending phases of another frame". Examiner has indicated that Canfield discloses "replacing the initial phases of at least one of the frames with the ending phases of another frame (column 3, lines 30–67)". Office Action at 3.

Canfield, column 3, lines 30–67 merely recites:

$$[DATA\ ARRAY\ 0]=[D0,\ D1,\ D2,\ D3,\ D4,\ D5,\ D6,\ D7] \qquad Eq.\ 3$$

This addition theorem allows Eq. 3 to be divided into two arrays without changing the transform:

$$[DATA\ ARRAY\ 1]=[D2,\ 0,\ D2,\ 0,\ D4,\ 0,\ D6,\ 0] \qquad Eq.\ 4$$
$$[DATA\ ARRAY\ 2]=[0,\ D1,\ 0,\ D3,\ 0,\ D5,\ 0,\ D7] \qquad Eq.\ 5$$

where

$$[DATA\ ARRAY\ 0]=[DATA\ ARRAY\ 1]+[DATA\ ARRAY\ 2] \qquad Eq.\ 6$$

In this case each array would require 64 operations to perform a DFT, thus doubling the number of operations. Yet, this situation must be examined further. With the Stretching Theorem, the transform of a stretched array is the same as the transform of the unstretched array, except that it is repeated. The fact that the amplitudes are halved can be ignored during this discussion, because the amplitudes will still be present in the same ratios. (Zonst 1995)

$$X[nm][DATA\ ARRAY\ 1]=[F0,\ F1,\ F2,\ F3,\ F4,\ F5,\ F6,\ F7] \qquad Eq.\ 7$$

As expected, the transform of the four data points is repeated. But, if the zeros are removed from the array, the same components will result, but only once.

$$[DATA\ ARRAY\ 1]=[D0,\ D2,\ D4,\ D6] \qquad Eq.\ 8$$
$$X[nm][DATA\ ARRAY\ 1]=[F0,\ F2,\ F4,\ F6] \qquad Eq.\ 9$$

In the same fashion:

$$[DATA\ ARRAY\ 2]=[D1,\ D3,\ D5,\ D7] \qquad Eq.\ 10$$
$$X[nm][DATA\ ARRAY\ 2]=[F1,\ F3,\ F5,\ F7] \qquad Eq.\ 11$$

After the transforms in equations 9 and 11 are obtained the transforms of [DATA ARRAY 1] and [DATA ARRAY 2] are combined. The transform of [DATA ARRAY 1] is obtained by stretching, or repeating the transform of [DATA

Assignee respectfully traverses the rejection and notes that the foregoing merely demonstrates "[I]f the 8 point array were split into two 4 point arrays, each 4

point DFT would need only 16 complex operations." Col. 3, Lines 19-21.

It is respectfully submitted that the combination of Canfield and Quatieri do not teach "replacing the initial phases of at least one of the frames with the ending phases of another frame". Accordingly, Assignee respectfully requests that Examiner withdraw the rejection to claims 1, 6, and 11, as well as to dependent claims 2-5, 7-10, and 12-15.

The Commissioner is authorized to charge such required fee to deposit Account No. 13-0017.

Respectfully submitted,

Mirut Dalal
Attorney for Applicants
Date: December 21, 2007   Registration No. 44,052

McANDREWS, HELD & MALLOY, LTD.
500 W. Madison – 34th Floor
Chicago, IL 60661
Phone: (312) 775-8000
Fax: (312) 775-8100